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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,699	12/10/2001	Di-An Hong	CM01269I(72468)	4412

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CHICAGO, IL 60603-3406

EXAMINER

FOULADI SEMNANI, FARANAK

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 08/09/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/016,699

Applicant(s)

HONG ET AL.

Examiner

Faranak Fouladi

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to communications: application, filed on 12/10/01; IDS, filed on 04/26/02; IDS, filed on 04/01/03; Amendment A, filed on 10/20/03; Amendment B, filed on 04/30/04 and Appeal Brief, filed on 04/30/04.

2. Amendment B, filed on 04/30/04 has been entered and considered.

3. In view of the appeal brief filed on 04/30/04, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

4. Claims 1-13 are pending in the case, with claim 1 being independent.

5. The present title of the application is "Method and apparatus for biometric control of display indicator" (as originally filed).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 7-9 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Mouse Cursor Control System using EMG" to Itou et al. (hereafter Itou) published in 2001 Proceedings of the 23rd Annual EMBS International Conference, October 25-28, Istanbul, Turkey pages 1368-1369.
8. Regarding independent claim 1, Itou disclose on page 1368 first column under the heading "II. SYSTEM" lines 1-3 a system for controlling a mouse cursor on the display using EMG signal as the input. Itou further disclose converting EMG signals (page 1368 second column line 7-9) from three muscles (on page 1368 second column line 1) to movement of mouse cursor to up, down, left, right, right click and left click.

Itou does not explicitly disclose establishing an angle of directional movement for the on-screen cursor in response to sensing at least some of the first electromyogram signals but it would have been obvious to an ordinary skilled in the art at the time of invention that in order to move the cursor in any direction

the angle of directional movement should be established first and then move the on-screen cursor in that direction.

9. Regarding dependent claim 2, Itou disclose using three different muscles on forearm on page 1368, second column line 1-4.
10. Regarding dependent claim 3 and 4, examiner interprets rotating an onscreen directional indicator that corresponds to the angle of directional movement to be moving the cursor to left or right or any established angle correspond to the EMG signal. Itou disclose on page 1368, first column lines 9-12 using EMG signal to produce mouse cursor operation like left or right, up or down movement. It is clear to change the direction of move for example from left to right or up to down the angle of direction of movement should be rotated to accommodate this directional change.
11. Regarding dependent claim 7-9, Itou disclose on page 1368, second column lines 13-19 shifting and scaling the inputted EMG signals from the sensors.
12. Regarding dependent claim 10-12, Itou disclose converting EMG signals (page 1368 second column line 7-9) from three muscles (on page 1368 second column line 1) to movement of mouse cursor to up, down, left, right, right click and left click.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 5-6 rejected under 35 U.S.C. 103(a) as being unpatentable over “Mouse Cursor Control System using EMG” to Itou et al. (hereafter Itou) published in 2001 Proceedings of the 23rd Annual EMBS International Conference, October 25-28, Istanbul, Turkey pages 1368-1369 as applied to claim 1 above, and further in view of US Patent 6,413,190 B1 to Woods et al., hereafter Woods.

15. Regarding dependent claim 5, Itou disclose on page 1368 first column under the heading “II. SYSTEM” lines 1-3 a system for controlling a mouse cursor on the display using EMG signal as the input. Itou further disclose converting EMG signals (page 1368 second column line 7-9) from three muscles (on page 1368 second column line 1) to movement of mouse cursor to up, down, left, right, right click and left click.

Itou does not disclose wirelessly transmitting information signals that at least correspond to the first and second electromyogram signals.

On the other hand, Woods disclose in col. 6 lines 62 – col. 7 line 11 a system that converts the EMG signals to move a cursor on the screen. Woods

further disclose in col. 15 lines 15-23 and in Fig. 5 wirelessly (remotely) transmitting information signals that correspond to EMG signals.

It would have been obvious to an ordinary skilled in the art at the time of invention to combine the system of Woods to the Itou's system to enable the user to remotely control other devices using the EMG signals and ultimately increase connivance of using the Itou's system.

16. Regarding dependent claim 6, the angle of directional movement for the on-screen cursor and movement of the on-screen cursor are in response to EMG signals inputted to the system through the use on sensors. Woods disclose in col. 15 lines 15-30 and in Fig. 5 wirelessly (remotely) transmitting information signals that correspond to EMG signals to control or drive a vehicle (examiner interpret the control to be consist of establishing the angle of directional movement and moving the cursor or the device in that direction.) It would have been obvious to an ordinary skilled in the art at the time of invention to combine the system of Woods to the Itou's system to enable the user to remotely control other devices using the EMG signals and ultimately increase connivance of using the Itou's system.

17. Regarding dependent claim 13, Wood disclose in col. 4 lines 1-7 setting a threshold level for the sensed EMG signals. It would have been obvious to an ordinary skilled in the art at the time of invention to combine the system of Woods

to the Itou's system to set and determine the threshold level for the sensed EMG signals to increase the functionality of the software for different users with different muscle strength to input a wide range of EMG signals to the system.

Response to Arguments

18. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Faranak Fouladi** whose telephone number is **703-305-3223**. The examiner can normally be reached on Mon-Fri from 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe** can be reach at **(703) 305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, DC. 20231


Or faxed to: 703-872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, sixth-floor (Receptionist).

Art Unit: 2674

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.

Faranak Fouladi-Semnani
Patent Examiner
Art Unit 2674
August 3, 2004


RICHARD HJERPE 8/3/04
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600